



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s) Lu et al.
Case: 7-1
Serial No.: 09/668,243
Filing Date: September 22, 2000
Group: 2667
Examiner: Anh Vu H. Ly

I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Signature: Robert Blake Date: July 8, 2005

Title: Radio Link Protocol (RLP)/Point-To-Point (PPP) Design for Wireless Multimedia Packet Networks that Passes Corrupted Data and Error Location Information Among OSI Layers

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are the following documents relating to the above-identified patent application:

- (1) Appeal Brief; and
- (2) Copy of Notice of Appeal, filed on May 6, 2005, with copy of stamped return postcard indicating receipt of Notice by PTO on May 9, 2005.

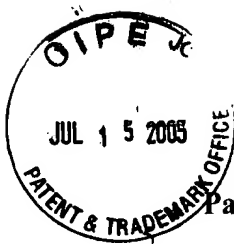
There is an additional fee of \$500 due in conjunction with this submission under 37 CFR §1.17(c). Please charge **Deposit Account No. 50-0762** the amount of \$500, to cover this fee. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Deposit Account No. 50-0762** as required to correct the error. A duplicate copy of this letter is enclosed.

Respectfully,

Kevin M. Mason

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Date: July 8, 2005

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Signature: *Bobbett Black* Date: July 8, 2005

Title: Radio Link Protocol (RLP)/ Point-to-Point (PPP) Design that Passes
 15 Corrupted Data and Error Location Information Among Layers in a
 Wireless Data Transmission Protocol

APPEAL BRIEF

20

Mail Stop Appeal Brief - Patents
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

Sir:

Applicants hereby appeal the final rejection dated January 7, 2005, of claims 1
 25 through 33 of the above-identified patent application.

REAL PARTY IN INTEREST

The present application is assigned to Lucent Technologies Inc., as evidenced by an assignment recorded on January 9, 2001 in the United States Patent and Trademark
 30 Office at Reel 011432, Frame 0218. The assignee, Lucent Technologies Inc., is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

07/18/2005 TBESHAH1 00000016 500762 09668243

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STATUS OF CLAIMS

Claims 1 through 33 are presently pending in the above-identified patent application. Claims 1, 3, 16-18, 21, 31, and 32 remain rejected under 35 U.S.C. §102(e) as being anticipated by Park et al. (United States Patent Publication Number 2002/0036993 A1), claims 1, 3-4, 7, 10, 16-18, 21, 23, 26, 31, and 32 remain rejected under 35 U.S.C. §102(e) as being anticipated by Ludwig et al. (United States Patent Publication Number 2004/0039833 A1), and claims 5-6, 8-9, and 24-25 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Ludwig et al. The Examiner indicated that claims 2, 11-15, 19-20, 22, 27-30, and 33 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a radio link protocol (RLP)/point-to-point protocol (PPP) design for wireless multimedia packet networks that passes corrupted packet data and error location information among OSI layers. The RLP layer provides erasure data frames and optionally error location indicators to the PPP layer (page 5, line 16, to page 8, line 6). When the PPP layer has access to the erasure data frames, the data frames can be padded with a predefined value, such as all zeroes "0" to prevent error propagation from one data frame (or octet) to the following data frames (or octets) (page 8, lines 7-13). When the PPP layer has access to the error location information, the PPP layer can detect if the PPP packet header is corrupted. When a valid header is detected, the PPP layer forwards the packet payload to the higher layers (TCP, UDP) whether or not the payload is properly received (page 8, lines 14-20). Thus, the application has access to all the usable information, so the application can determine whether and how to utilize the information. The RLP/PPP design of the present invention allows packets with partially corrupted payloads to still be forwarded to the UDP layer and then to the application layer (page 8, line 14, to page 9, line 14).

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3, 16-18, 21, 31, and 32 are rejected under 35 U.S.C. §102(e) as being anticipated by Park et al., claims 1, 3-4, 7, 10, 16-18, 21, 23, 26, 31, and 32 are rejected under 35 U.S.C. §102(e) as being anticipated by Ludwig et al., and claims 5-6, 8-9, and 24-
 5 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ludwig et al.

ARGUMENT

Independent Claims 1, 7, 16, 21, 23 and 31

Independent claims 1, 16, 21, and 31 are rejected under 35 U.S.C. §102(e) as
 10 being anticipated by Park et al. and claims 1, 7, 16, 21, 23, and 31 are rejected under 35 U.S.C. §102(e) as being anticipated by Ludwig et al.

Regarding claims 1, 16, 21, and 31, the Examiner previously asserted that Park teaches that, if there is some error, a blank data block (erasure data frame) is transmitted to the upper layer...(forwarding erasure data frames with said multimedia data to a PPP
 15 layer). The Examiner also asserted that Ludwig discloses that “packets of the unnumbered mode will be released to the next higher layer regardless if a delimiter has been received or not. Herein, as illustrated in FIG. 6, the next higher layer is PPP Layer...(forwarding erasure data frames with multimedia data to a PPP layer).” In the Response to Arguments section of the final Office Action, the Examiner further asserted that Ludwig implies that the PPP
 20 packet does include the delimiters (start or end flag) since Ludwig discloses that the RLP sender will also look for the delimiters (start or end flag) of the next higher layer, e.g. PPP (paragraph 82). In the Advisory Action, the Examiner asserts that “erasure data frames, as considered by the Examiner, are data frames containing either corrupted bits or missing bits. Therefore, blank data block is considered as erasure data block by the Examiner.” The
 25 Examiner acknowledges that blank data blocks contain no data, but asserts that the blocks can be filled with any binary values.

Appellants note that, as the Examiner acknowledges, Park teaches that a *blank* data block is transmitted to the upper layer. Erasure frames, however, are not blank data blocks, as would be apparent to a person of ordinary skill in the art. The present disclosure teaches that, “when the multiplex sub-layer detects a *corrupted data block*, the multiplex sub-layer classifies the block as an *erasure block*” (page 6, lines 25-26; emphasis added); the present disclosure, therefore, defines erasure as *corrupted*. Similarly, United States Patent Application Number 09/668,242 entitled “Complete User Datagram Protocol (CUDP) for Wireless Multimedia Packet Networks Using Packet Level Forward Error Correction (FEC) Coding,” incorporated by reference in the present disclosure, teaches that, “if a *physical frame is corrupted*, the *payload within the frame* is represented as a set of *erasures*.” (Page 8, lines 15-16; emphasis added.) Thus, blank data blocks are not erasure frames.

Contrary to the Examiner’s assertion, Appellants also note that a blank data block is *not* an erasure data frame replaced with a predefined binary value. Blank is defined as *containing no information; not completed or filled in* (see, dictionary.com). Park, therefore, does not disclose or suggest replacing an *erasure data frame with a predefined binary value*.

Thus, Park does not disclose or suggest forwarding erasure data frames with *multimedia data* to a PPP layer, does not disclose or suggest replacing said *erasure data frames with a predefined binary value*, and does not disclose or suggest processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.

Appellants also note that Ludwig teaches that “the IP datagram is passed to the link layer, where a header associated with the link layer protocol (LLP), e.g. the Point-to-Point Protocol (PPP), is added. The resulting packet is often called a *frame*.” (Paragraph 7; emphasis added.) Ludwig then teaches that the frame also receives a start flag and an end flag. The PPP level packet or frame does not, however, include the start flag or the stop flag. If a start flag or stop flag is corrupted, the PPP frame is *not* corrupted since the flag(s) are not part of the frame. Thus, the frames that are associated with corrupted start or stop flags are *not erasure frames* since the frames have no errors. Since frames with corrupted start or stop flags are not erasure frames, Ludwig does not suggest or disclose forwarding erasure

data frames with *multimedia data* to a PPP layer. Ludwig also does not disclose or suggest replacing said *erasure data frames with a predefined binary value*, or processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.

5 Regarding the Examiner's assertion that Ludwig implies that the PPP packet includes the delimiters (start or end flag), Appellants note that, in the text cited by the Examiner, Ludwig simply teaches that the "RLP sender will also look for the delimiters of the next higher layer." (Paragraph 82.) Contrary to the Examiner's assertion, this statement only implies that there are delimiters of the next higher layer; it does not teach if the
10 delimiters are part of the PPP frame. As noted above, Ludwig teaches that a **frame** is the packet that results from adding a header associated with the link layer protocol to an IP datagram (paragraph 7). Ludwig then teaches that "the frame also receives a start flag and an end flag" (paragraph 7); Ludwig is clearly acknowledging that the packet is a frame prior to the addition of the start and end flag.

15 In addition, in the text cited by the Examiner (paragraph 82), Ludwig teaches to duplicate every higher layer delimiter. Appellants note that the higher layer delimiters are **not** disclosed to be the flags added to the frame (as described in paragraph 7). Thus, Ludwig does not disclose or suggest that the higher layer delimiters are start or stop flags, that the higher layer delimiters are used for error detection or that the duplicated delimiters are used
20 for error detection.

Finally, contrary to the Examiner's assertion, Appellants could find no disclosure or suggestion to replace erasure data frames with a predefined binary value in the text cited by the Examiner (paragraph 81 in regard to claim 7).

25 Independent claims 1 and 21 require forwarding *erasure data frames* with said *multimedia data* to a Point-to-Point Protocol (PPP) layer, independent claims 7 and 23 require replacing said *erasure data frames with a predefined binary value*, and independent claims 16 and 31 require processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.


Thus, Park et al. or Ludwig et al., alone or in combination, do not disclose or suggest forwarding erasure data frames with said multimedia data to a Point-to-Point Protocol (PPP) layer, as required by independent claims 1 and 21, do not disclose or suggest replacing said erasure data frames with a predefined binary value, as required by independent claims 7 and 23, and do not disclose or suggest processing said multimedia data to determine if said multimedia data is properly received; and communicating error information between said RLP and UDP layers, as required by independent claims 16 and 31.

Conclusion

The rejections of the independent claims under section §103 in view of Park et al. or Ludwig et al., alone or in any combination, are therefore believed to be improper and should be withdrawn. The remaining rejected dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,



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Date: July 8, 2005

APPENDIX

1. A method for processing multimedia data in a Radio Link Protocol (RLP) layer of a wireless packet network, said method comprising the steps of:

5 processing said multimedia data to determine if said multimedia data is properly received; and

 forwarding erasure data frames with said multimedia data to a Point-to-Point Protocol (PPP) layer.

10 2. The method of claim 1, further comprising the step of forwarding a location indicator of said erasure frames to said PPP layer.

 3. The method of claim 1, further comprising the step of representing said erasure data frames in a predefined form.

15

 4. The method of claim 3, wherein said predefined form is the original received data frames.

 5. The method of claim 3, wherein said predefined form is a binary pattern
20 comprised of all ones.

 6. The method of claim 3, where said predefined form is a binary pattern comprised of all zeroes.

7. A method for processing multimedia data in a Point-to-Point Protocol (PPP) layer of a wireless packet network, said method comprising the steps of:

25 receiving erasure data frames with said multimedia data from a Radio Link Protocol (RLP) layer; and

 replacing said erasure data frames a predefined binary value.

8. The method of claim 7, wherein said predefined binary value is an all zeroes pattern.

9. The method of claim 7, wherein said predefined binary value is an all ones pattern.

5 10. The method of claim 7, wherein said predefined binary value is the original received data frames.

11. The method of claim 7, further comprising the step of receiving a location indicator of said erasure frames from said RLP layer.

10 12. The method of claim 11, further comprising the step of using said location indicator to detect if a packet header is corrupted.

13. The method of claim 12, further comprising the step of forwarding a packet payload to a higher layer if a valid header is received.

15 14. The method of claim 12, further comprising the step of forwarding a packet payload to a higher layer if a valid header is received even if said packet payload is not properly received.

15. The method of claim 12, where the PPP layer updates the location indicator and forwards it to a higher layer if a valid header is received.

20 16. A method for processing multimedia data in a receiver of a wireless packet network, said receiver conforming to an open system interconnection (OSI) model, said OSI model having a plurality of layers including a Radio Link Protocol (RLP) layer, a set of interface layers and a User Datagram Protocol (UDP) layer, said method comprising the steps of:

processing said multimedia data to determine if said multimedia data is properly received; and

communicating error information between said RLP and UDP layers.

17. The method of claim 16, wherein said RLP layer forwards an erasure data frame to said set of interface layers.

18. The method of claim 17, further comprising the step of forwarding packets with erasure data frames to said UDP layer.

19. The method of claim 16, wherein said RLP layer forwards an indication of a location of erasure data to said UDP layer.

20. The method of claim 19, further comprising the step of updating the location of said erasure data and forwarding it to said UDP layer

21. A system for processing multimedia data in a Radio Link Protocol (RLP) layer of a wireless packet network, said system comprising:

a memory for storing computer readable code; and

a processor operatively coupled to said memory, said processor configured to: process said multimedia data to determine if said multimedia data is properly received; and

forward erasure data frames with said multimedia data to a Point-to-Point Protocol (PPP) layer.

22. The system of claim 21, wherein said processor is further configured to forward a location indicator of said erasure frames to said PPP layer.

23. A system for processing multimedia data in a Point-to-Point Protocol (PPP) layer of a wireless packet network, said system comprising:

a memory for storing computer readable code; and
a processor operatively coupled to said memory, said processor configured to:
receiving erasure data frames with said multimedia data from a Radio Link
Protocol (RLP) layer; and

5 replacing said erasure data frames a predefined binary value.

24. The system of claim 23, wherein said predefined binary value is an all
zeroes pattern.

25. The system of claim 23, wherein said predefined binary value is an all
ones pattern.

10 26. The system of claim 23, wherein said predefined binary value is the
original received data frames.

27. The system of claim 23, wherein said processor is further configured to
receive a location indicator of said erasure frames from said RLP layer.

15 28. The system of claim 27, wherein said processor is further configured to
use said location indicator to detect if a packet header is corrupted.

29. The system of claim 28, wherein said processor is further configured to
forward a packet payload to a higher layer if a valid header is received.

20 30. The system of claim 28, wherein said processor is further configured to
forward a packet payload to a higher layer if a valid header is received even if said packet
payload is not properly received.

31. A system for processing multimedia data in a receiver of a wireless packet network, said receiver conforming to an open system interconnection (OSI) model, said OSI model having a plurality of layers including a Radio Link Protocol (RLP) layer a set of interface layers and a User Datagram Protocol (UDP) layer, said system comprising:

- 5 a memory for storing computer readable code; and
 a processor operatively coupled to said memory, said processor configured to:
 processing said multimedia data to determine if said multimedia data is
properly received; and
 communicating error information between said RLP and UDP layers.

- 10 32. The system of claim 31, wherein said RLP layer forwards an erasure data
frame to said UDP layer.

33. The system of claim 31, wherein said RLP layer forwards an indication of
a location of erasure data to said UDP layer.



PTO/SB/31 (08-03)

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**NOTICE OF APPEAL FROM THE EXAMINER TO
THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Docket Number (Optional)

Lu 7-1

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Signature

Typed or printed
name

Bobbette A. Blake

In re Application of

Lu et al.

Application Number

09/668,243

Filed

September 22, 2000

For Method and Apparatus for Dynamically Varying the Play-Out
Delay in a Packet Network Demonstrating Correlated Packet Delays

Art Unit

2667

Examiner

Anh Vu H. Ly

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 1.17(b))

\$ 500.00

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:

\$ _____

☐ A check in the amount of the fee is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-0762. I have enclosed a duplicate copy of this sheet.☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the

☐ applicant/inventor.☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)☒ attorney or agent of record.
Registration number 36,597☐ attorney or agent acting under 37 CFR 1.34(a).
Registration number if acting under 37 CFR 1.34(a) _____

Signature

Kevin M. Mason

Typed or printed name

203-255-6560

Telephone number

May 6, 2005

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.191. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Receipt in the USPTO is hereby acknowledged of:

- Transmittal Letter – (Original & 1 copy)
- Notice of Appeal - (Original & 1 copy)
- Petition For Extension Of Time Under 37 C.F.R. 1.136
- Change of Correspondence Address

RECEIVED
MAY 13 2005

Case Name: Lu 7-1
Serial No.: 09/668,243



1200-457

May 6, 2005 KMM